PHIN Message Quality Framework (MQF)
User Guide:

Version 2.6

April, 2012

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INSTRUCTIONS FOR USING THE SYSTEM

GETTING STARTED

1. In order to access the system, input the following URL: https://phinmqf.cdc.gov/.

   Result: The following window displays. You have accessed the Home Page of the PHIN Message Quality Framework (MQF) application.

2. To continue, click one of the Message Domains.

MQF NAVIGATIONAL AIDS

The *left navigation panel* remains static as you use the system and provides you with References, Related Specifications, Related Websites, User Links, Downloads and Sample Messages.

The *right navigation panel* is dynamic and provides you with instructional information as you navigate through the system.

The *center portion of the page* is a dynamic work area and is the area where you interact with PHIN MQF. To access one of the links in blue type in the left column, click on that link.

These areas on the page are discussed in detail as you progress through the manual.

LEFT NAVIGATION PANEL

The *left navigation panel* remains static as you use the system and provides you with links to References, Related Specifications, Related Websites, User Links, and Downloads of profiles.

References

About MQF
Release Notes
Supported Specifications

Related Specifications

Case Notification
ELR
Immunization
PHLIP
Syndromic Surveillance

Related Websites

CDC Meaningful Use
ISDS Meaningful Use
PHIN Certification
PHIN MS

The **References** section on the *left navigation panel* provides you with information about the current release. The About MQF link opens another window and displays the current MQF release number as well as the date released. The Release Notes link opens a PDF file that outlines all enhancements and defects that have been fixed in the current release. The graphic below displays a sample Table of Contents for a Release Notes document

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The final link is Supported Specifications. This link opens a PDF file, which outlines all published messaging standards that are supported in the current MQF release. The file further defines for each messaging standard what type of validation is performed: structural, constraint, and vocabulary validation. The following is a screen shot of the Supported Specification PDF.

SUPPORTED SPECIFICATIONS

MQF supports HL7 validation for the following published message standards:

Meaningful Use
The American Recovery and Reinvestment Act authorizes the Centers for Medicare & Medicaid Services (CMS) to provide a reimbursement incentive for physician and hospital providers who are successful in becoming "meaningful users" of an Electronic Health Record (EHR). Starting in 2015, providers are expected to have adopted and be actively utilizing an EHR in compliance with the "meaningful use" definition or they will be subject to financial penalties under Medicare. In order to support Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Final Rule for Meaningful Use, the MQF system has implemented message validation support. To meet this need, the following requirements have been included in PHIN MQF.

Structural / Constraint / Vocabulary Validation is implemented for the following:

The Related Specifications section on the *left navigation panel* provides links to the messaging standards used as a basis for the message validation within the MQF system. The Case Notification link opens the page detailing Case Notification Message Mapping Guide information.

The ELR Specification link will open a window that provides information about the HL7 website where the ELR specification can be purchased and downloaded. MQF is not allowed to distribute the ELR implementation guide since the guide is copyrighted by Health Level Seven International and therefore requires an HL7 licensing agreement to purchase.

The Immunization Implementation Guide can be accessed by clicking the Immunization link. The following guide opens in PDF format.
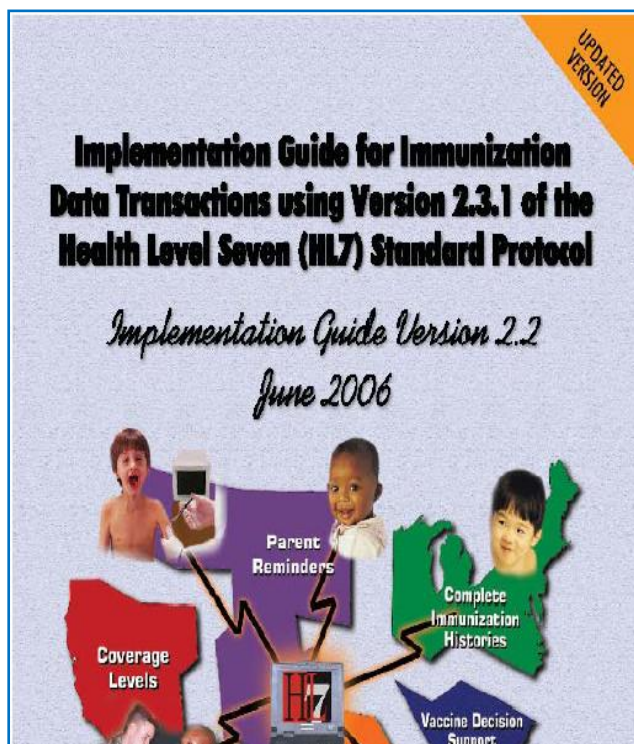
When you click the PHLIP link, you are directed APHL-CDC Public Health Laboratory Interoperability Project (PHLIP) Messaging Guide PDF. The purpose of this document is to specify the Health Level Seven (HL7) messaging guide, as supported by laboratory information systems, for the reporting of influenza test results

APHL ASSOCIATION OF
PUBLIC HEALTH LABORATORIES

**APHL-CDC Public Health Laboratory
Interoperability Project (PHLIP)**

**MESSAGING GUIDE FOR INFLUENZA
TEST RESULT REPORTING**

BY PUBLIC HEALTH LABORATORIES

ORU^R01

If you click the Syndromic Surveillance link, you are directed to the following page.

**PHIN MESSAGING GUIDE FOR SYNDROMIC
SURVEILLANCE: EMERGENCY
DEPARTMENT AND URGENT CARE DATA**

ADT MESSAGES A01, A03, A04, and A08

HL7 Version 2.5.1

(Version 2.3.1 Compatible)

Release 1.0

Related Websites

CDC Meaningful Use

ISDS Meaningful Use

PHIN Certification

PHIN MS

PHIN VADS

The **Related Websites** area of the *left navigation panel* provides links to additional websites that are resources for MQF: CDC Meaningful Use, ISDS Meaningful Use, PHIN Certification, PHIN MS, and PHIN VADS.
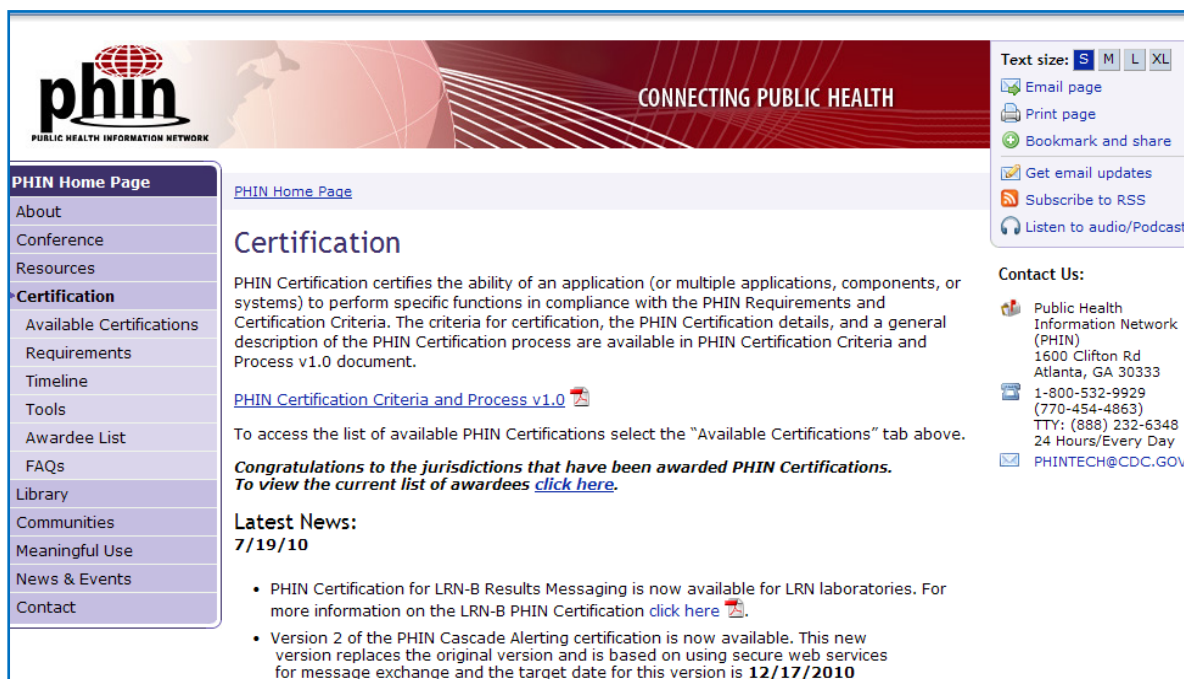
When you click the "CDC Meaningful Use" link, the CDC Meaningful Use website displays (see below) providing information on Meaningful Use topics.

In addition, this website provides external links, and provides answers to Frequently Asked Questions.

When you click the ISDS Meaningful Use link, the International Society for Disease Surveillance website displays providing Background, Development Process, and Support information regarding ISDS Meaningful Use.

When you click the PHIN Certification link from the *left navigation panel*, the Public Health Information Network (PHIN) website opens presenting PHIN Certification information. In addition, you can access the PHIN Certification Criteria and Process v.10 PDF, and the latest PHIN news that is available.

When you click the PHIN MS link from the *left navigation panel*, the Public Health Information Network (PHIN) website displays detailing information about the PHIN Messaging System. This website provides links to installation and support information.

If you select PHIN VADS, the PHIN Vocabulary Access and Distribution System (VADS) website displays.This site allows you to Search Vocabulary, Download Vocabulary, and provides a compilation PHIN VADS Hot Topics.

The **User Links** area of the *left navigation panel* provides further support documentation for MQF including MQF Frequently Asked Questions, a link to this MQF User Guide and a link to PHIN MQF Glossary. The Glossary defines terminology and acronyms that are used in the discussions of MQF.

An example of the Frequently Asked Questions PDF is displayed below.

User Links

FAQ
User Guide
MQF Glossary

Downloads

Profiles

PHIN MQF Frequently Asked Questions

1. **What is PHIN MQF?**

   The Message Quality Framework (MQF) is a flexible framework of services and utilities designed to assist public health partners with preparing and communicating quality, standard electronic messages as defined by the applicable messaging, vocabulary, and programmatic standards.

   The PHIN Message Quality Framework (MQF) application is designed to accompany and to assist other CDC Public Health systems and partners in promoting the use of data and information system standards to advance the development of efficient, integrated, and interoperable surveillance systems at federal, state, and local levels.

2. **What are the objectives including functionality of MQF?**

   The PHIN Message Quality Framework (MQF) is a Web application, which enables users to load HL7 messages for structural, and message mapping Guide-constrained validation through the following methods:
   - Sample (a pre-defined example message that is built into MQF)
   - Cut and Paste Message (a message you Cut and Paste into the Message Validation area)
   - File (a message that you browse for and load from your local system or network)

   Once an HL7 message is loaded, a user may then edit the message in the MQF Validation Message Text

The **Download** area on the *left navigation panel* provides the capability to download the conformance profiles used within MQF for validation. A download provides Rhapsody s3d and XML formatted files that contain the structural and constraint validation for a selected domain (i.e., Case Notification, PHLIP, Immunization, etc).

The package that is downloaded also contains a Supplemental Specification document that provides the mapping, rules, and vocabulary that is validated for a selected message domain.

When you click *Profiles* under the Downloads section, the following window displays listing the available downloaded profiles.
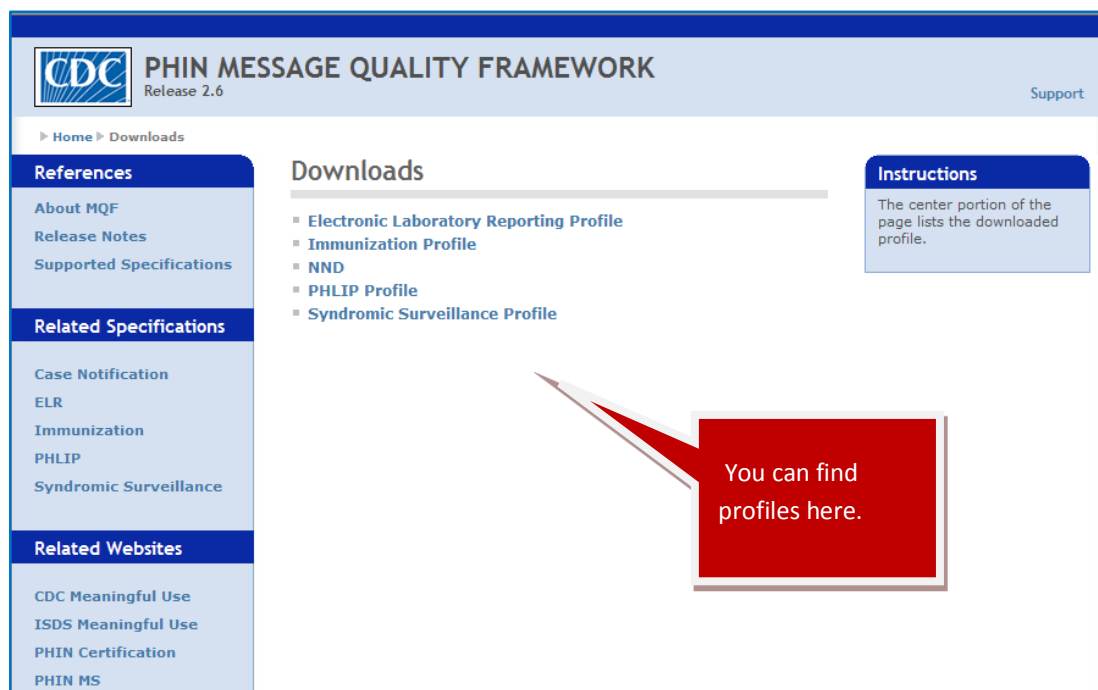
RIGHT NAVIGATION PANEL

The *right navigation panel* is dynamic and provides you with instructional information as you navigate

through the system. As you progress through the system, the system presents immediate instructions and dynamically changes with each window.

DYNAMIC WORK AREA

The *center portion of the page* is the dynamic work area and is the area where you interact with PHIN MQF. In order to begin message validation, a message domain must be selected. To access one of the Message Domains in blue type, click on that link.

Breadcrumbs or a *breadcrumb trail* is a navigation tool that used for the user interface. Breadcrumbs provide a trail for the user to follow back to the starting or entry point.

Note the word, *Home*, in top-left corner of the window. *Home* is an example of a breadcrumb. As you progress through the program, the breadcrumbs provide a way to trace your location within the program.

In top-right corner of the Landing Page, note the word *Support.*

When you click "Support," an email opens in another window. See email sample below. As a user, if you have a problem using the system, a question about the system, or a suggested enhancement for the system, select this link.
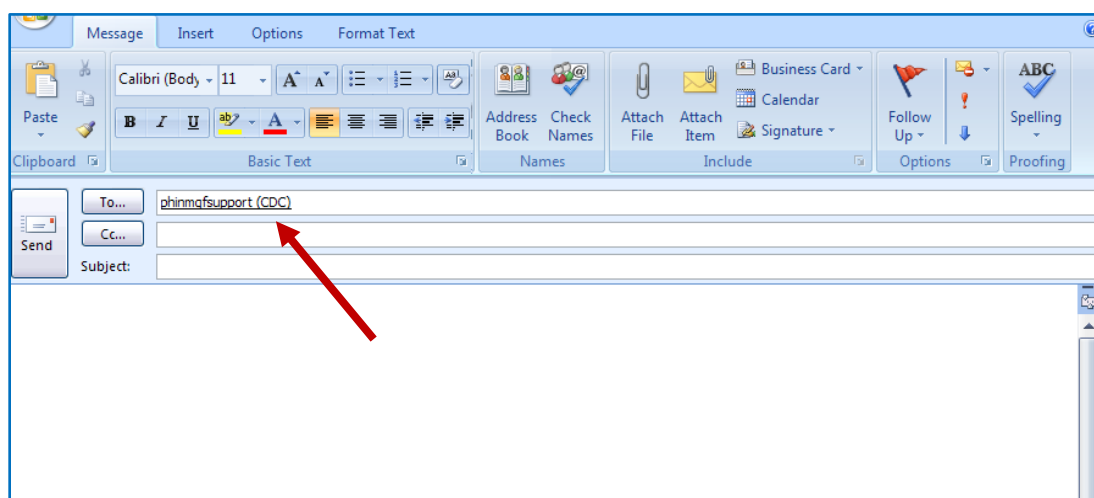
Note the *Contact Us* link in the grey border at the bottom of the page. The *Contact Us* link has the same behavior as the "Support" link."

The *Privacy Policy* is located in the grey border at the bottom of each page next to the *Contact Us* link. When you click "Privacy Policy," the link directs you to the MQF Privacy Policy which explains what type of information the MQF system collects and stores.

STEPS TO CONTINUE THE VALIDATION PROCESS

In order to validate a sample message, you must complete the following five steps.

1. Load your message
2. If you selected a sample message, you must select the appropriate message specification.
3. Validate your output
4. Complete Structural Validation
5. Complete Vocabulary Validation, after you completed a successful structural validation.

LOADING A MESSAGE

You have arrived at this window because you selected a Message Domain from the Message Domain window. This screen will allow you to load a message into the system in order to validate the structure, business rules, and vocabulary for the message

Note: In the following instructions, the windows displays without a Selected Project name. The instructions depict a generic path through the system. The Selected Project will change depending on the Message Domain you select and will display accordingly.

A message can be loaded into the MQF system in one of the following ways:

- Sample (a pre-defined example message that is built into MQF)
- Cut and Paste Message (a message you Cut and Paste into the Validation Message area)
- File (a message that you browse for and load from your local system or network)

LOADING A SAMPLE MESSAGE

1. Select Sample from the drop-down menu.

Loading a Message Specification for a Sample Message

Note: This screen is displayed only if you have selected sample message.

1. To continue, you must select a specification from the Message Specification drop-down menu that lists the currently available Message Specifications for the project.

   Note: For the purposes of detailing instructions in this manual, we will only select one Message Specification path and follow those instructions for loading a sample message. . Instructions for the remaining specification paths would follow the same process.

You have arrived at this window because you selected a Message Specification.

2. Next, you must determine which of the following sample message you want to validate. There are three types of sample messages. Select a message from the drop-down menu.

- Valid – a message that passed both structural and vocabulary validation without errors e.g., (Valid -TBV2.0Case Notification)
- Invalid Structural – a message that did not pass structural validation and presents a structural validation error report e.g., (Invalid-TBV2.0 Case Notification)
- Invalid Vocabulary – a message that passed structural validation, but did not pass vocabulary validation and presents a vocabulary validation error report e.g., (Invalid-Vocabulary- TBV2.0 Case Notification)

3. To continue, click "Load."

Result: Your message displays in the text box. You can edit or make any appropriate changes to the message that displays.
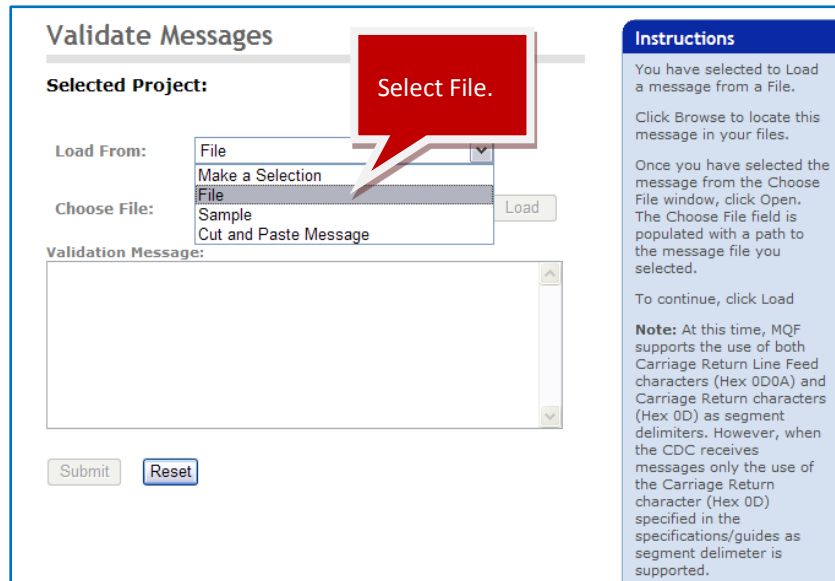

1. To continue, click "Submit."

    Note: At this time, MQF supports the use of both Carriage Return Line Feed characters (Hex 0D0A) and Carriage Return characters (Hex 0D) as segment delimiters. However, when the CDC receives messages, only the use of the Carriage Return character (Hex 0D) specified in the specifications/guides as a segment delimiter is supported.

2. Note the Reset button. When you click "Reset," you clear all drop-down menu selections.

LOADING A CUT AND PASTE MESSAGE

You have arrived at this window because you selected a Message Domain from the Message Domain window.

1. Select "Cut and Paste Message" from the drop-down menu.

2. You have selected to Cut and Paste a message to the Validation Message area. Copy and paste your message into the area.

3. You can edit or make any appropriate changes to the pasted message.

4. To continue, click "Submit."

Note: At this time, MQF supports the use of both Carriage Return Line Feed characters (Hex 0D0A) and Carriage Return characters (Hex 0D) as segment delimiters. However, when the CDC receives messages, only the use of the Carriage Return character (Hex 0D) specified in the specifications/guides as a segment delimiter is supported.

5. Note the Reset button. When you click "Reset," you clear all drop-down menu selections.

LOADING A MESSAGE FROM FILE

You have arrived at this window because you selected a Message Domain from the Message Domain window.

1. To load a message from File, select File from the drop-down menu.

2. Browse to select a message from the Choose File window and then click "Open."

Result: The following window displays.
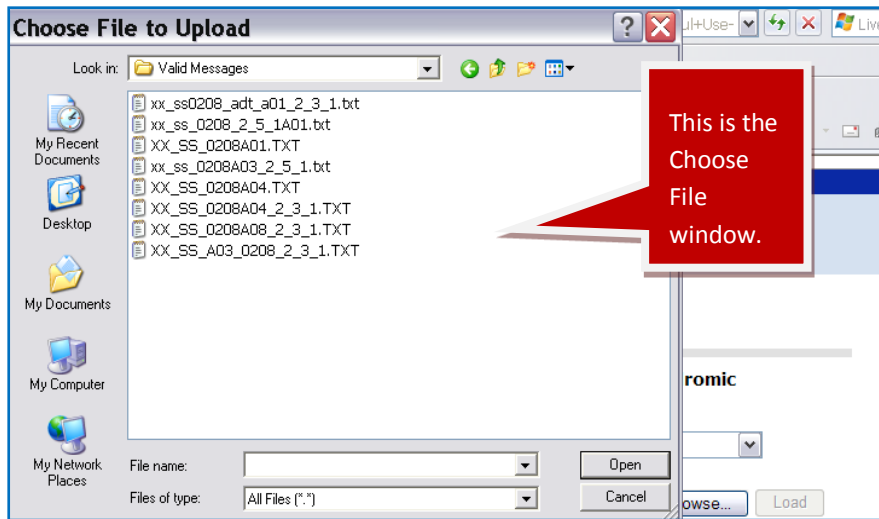
3. Select the file to upload.

    Result: The *Choose File* field populates with a path to the message file you selected.
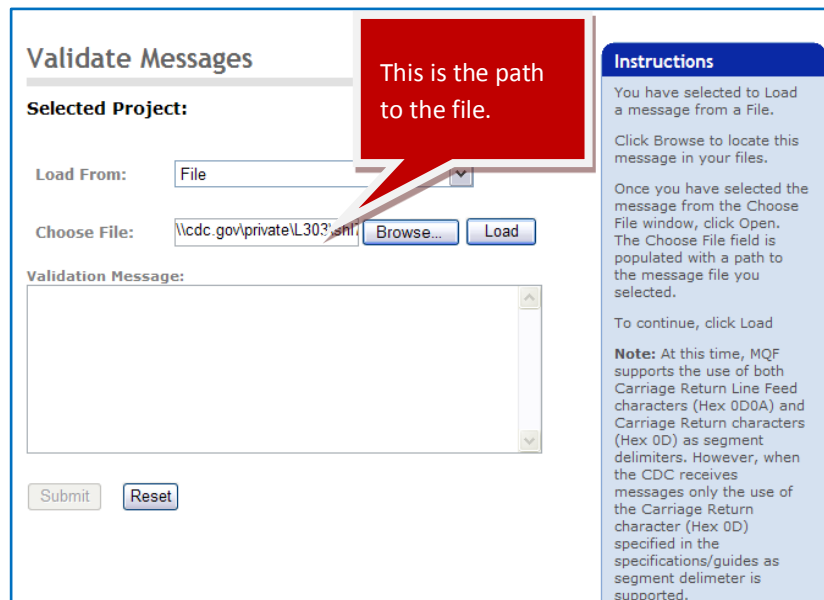
4. To continue, click "Load."

    Result: The message you selected to load from file displays in the Validation Message text box. You can edit or make any appropriate changes to the message that displays.
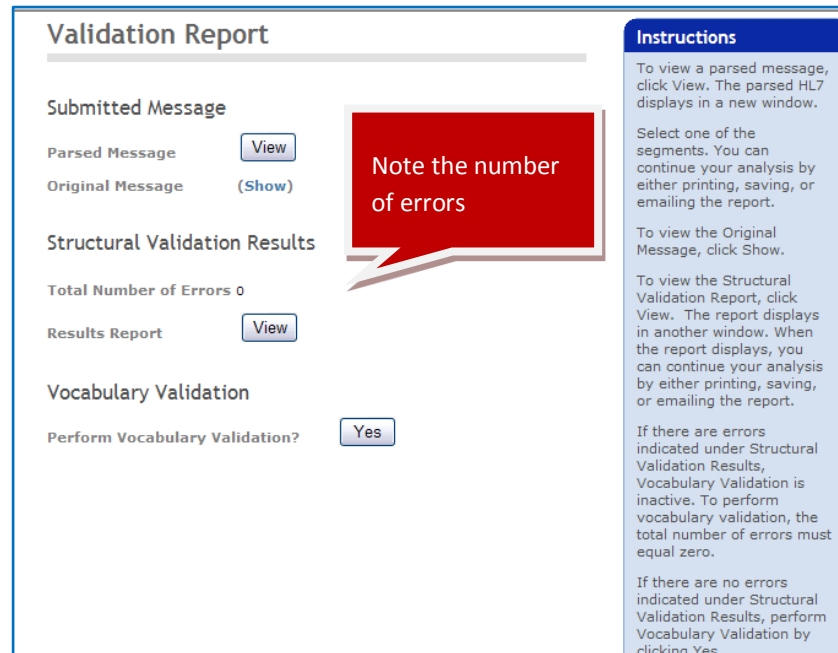
5. To continue, click "Submit."

   Note: At this time, MQF supports the use of both Carriage Return Line Feed characters (Hex 0D0A) and Carriage Return characters (Hex 0D) as segment delimiters. However, when the CDC receives messages, only the use of the Carriage Return character (Hex 0D) specified in the specifications/guides as a segment delimiter is supported.

6. Note the Reset button. When you click "Reset," you clear all drop-down menu selections.

VALIDATING OUTPUT

This window displays after Structural and Message Constraint Validation for the message is complete. From this window, you can access the Submitted Message, view Structural Validation Results, and execute Vocabulary Validation.
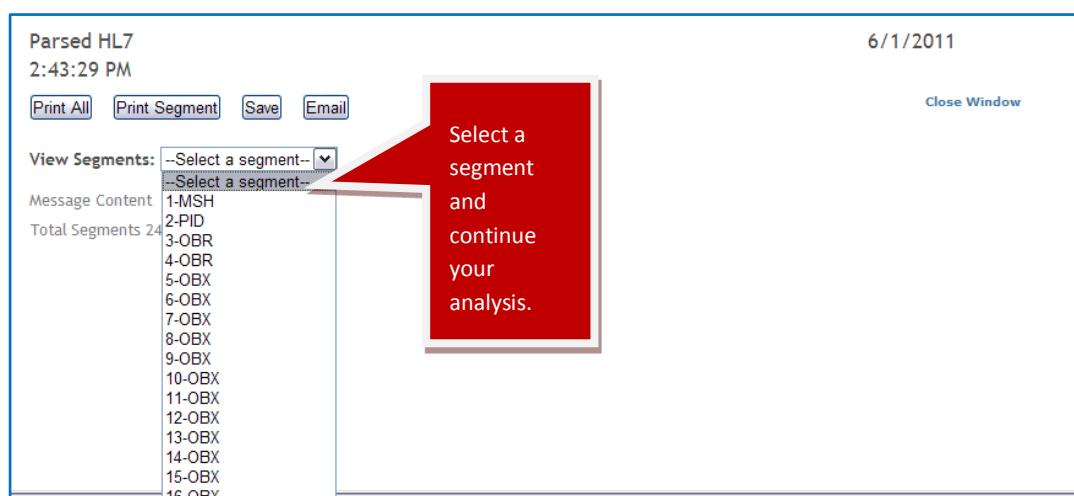
SUBMITTED MESSAGE

This window provides the capability to view, print, or email the submitted message.

1. To view the parsed message or segments of the message, click "View."

   Result: You arrived at this window because you clicked View below the submitted message section. The parsed HL7 message selected for validation displays in a new window.


If you click the "Print All," a new window is opened to allow selection of the printer. Once the printer and print button is selected, the entire message prints, even if a segment was selected.
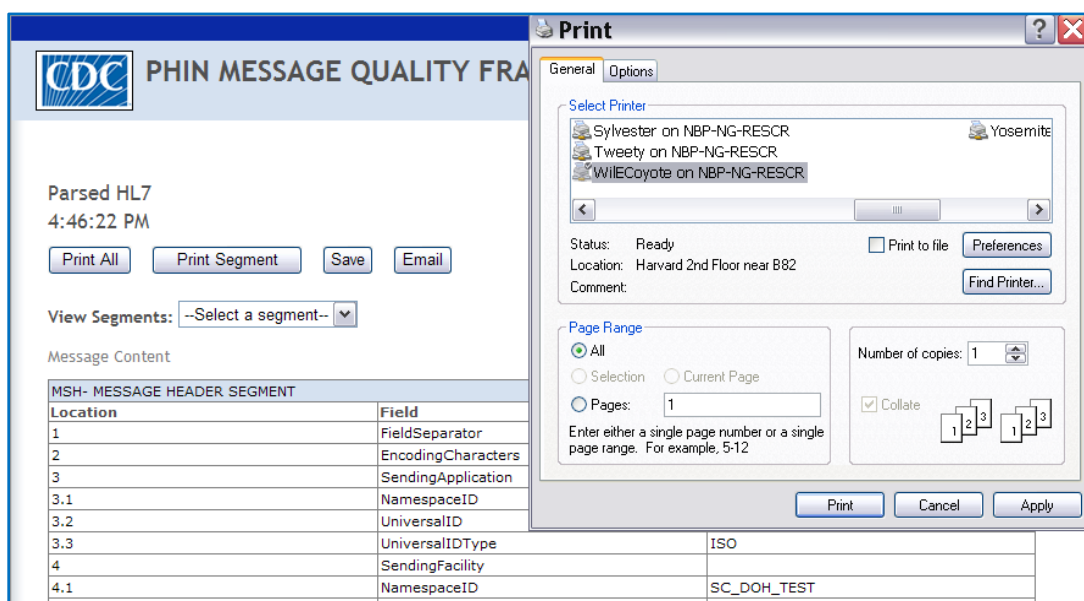
To print a message segment select a message segment from the view segments drop-down list and click "Print Segment."

Note: If a message segment has not been selected, the following message will be displayed
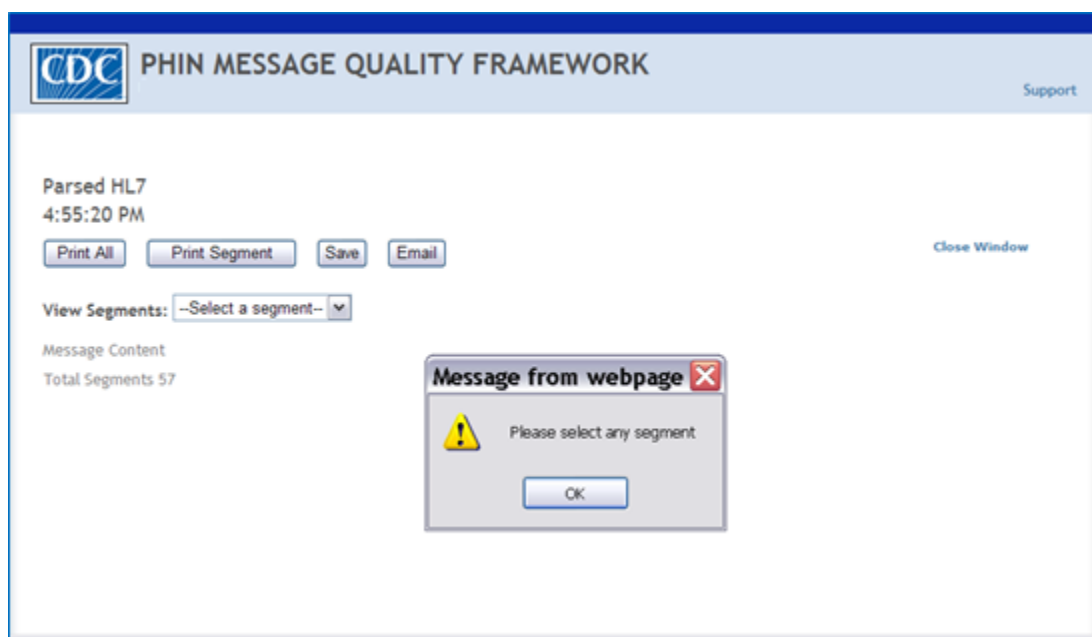
2. Select one of the segments.

>   **Result:** The parsed segment displays in a report in another window.

>   *Note*: The 1MSH segment was selected. You can continue your analysis by either printing, saving, or emailing the entire report.

Parsed HL7   6/1/2011
3:20:38 PM

| Print All | Print Segment | Save | Email |

Close Window

Description of the segment

View Segments: 1-MSH ▼

MSH- MESSAGE HEADER SEGMENT		
Location	**Field**	**Value**
1	FieldSeparator	|
2	EncodingCharacters	^~\&
3	SendingApplication	
3.1	NamespaceID	PHL_LIMS
3.2	UniversalID	2.16.840.1.114222.4.1.10412
3.3	UniversalIDType	ISO
4	SendingFacility	
4.1	NamespaceID	PHL
4.2	UniversalID	1234
4.3	UniversalIDType	CLIA
5	ReceivingApplication	
5.1	NamespaceID	PHA_ELR
5.2	UniversalID	2.16.840.1.113883.19.3.2
5.3	UniversalIDType	ISO
6	ReceivingFacility	
6.1	NamespaceID	PHA
6.2	UniversalID	2.16.840.1.113883.19.3.2
6.3	UniversalIDType	ISO
7	DateTimeOfMessage	
7.1	Time	

By clicking "Save," the entire parsed message, not only the one selected, saves to a file on your local drive.

Parsed HL7   **6/6/2011 4:51:11 PM**

Message Content

MSH- MESSAGE HEADER SEGMENT		
Location	**Field**	**Value**
1	FieldSeparator	|
2	EncodingCharacters	^~\&
3	SendingApplication	
3.1	NamespaceID	NBS
3.2	UniversalID	2.16.840.1.114222.4.5.1
3.3	UniversalIDType	ISO
4	SendingFacility	
4.1	NamespaceID	SC_DOH_TEST
4.2	UniversalID	2.16.840.1.114222.4.1.3680
4.3	UniversalIDType	ISO
5	ReceivingApplication	
5.1	NamespaceID	PHINCDS
5.2	UniversalID	2.16.840.1.114222.4.3.2.10
5.3	UniversalIDType	ISO
6	ReceivingFacility	
6.1	NamespaceID	PHIN
6.2	UniversalID	2.16.840.1.114222
6.3	UniversalIDType	ISO

When you click "Email button," the email window opens. This email window provides the capability to enter the receiver email address, type a message, and attach the entire parsed message.

Note: The entire parsed message will be sent in the email, not only the one selected segment.

STRUCTURAL VALIDATION RESULTS

1. Note the Structural Validation Results displayed on Validation Report window. The total number of errors is zero (0).

2. To view the Structural Validation Report, click "View."

   Result: This report displays in a new window.

   The report displayed contains two types of error reporting: Structural Validation and Constraint Validation reporting. Once the report displays, you can continue your analysis by either printing, saving, or emailing the report. The print, save, and email functionality is the same functionality as the parse message screen print, save, and email capability. Refer to the parse message section for further detail.

The window below displays a sample Structural Validation Report when the message has passed structural validation.

The window below displays a sample Structural Validation Report, which contains structural validation errors.

The window below displays a sample Structural Validation Report, which contains no structural validation errors, but contains a Message Constraint Validation Report.

VOCABULARY VALIDATION RESULTS

1. If there are *errors* indicated under Structural Validation Results, Vocabulary Validation is inactive. To perform vocabulary validation, the total number of errors must equal zero (0).
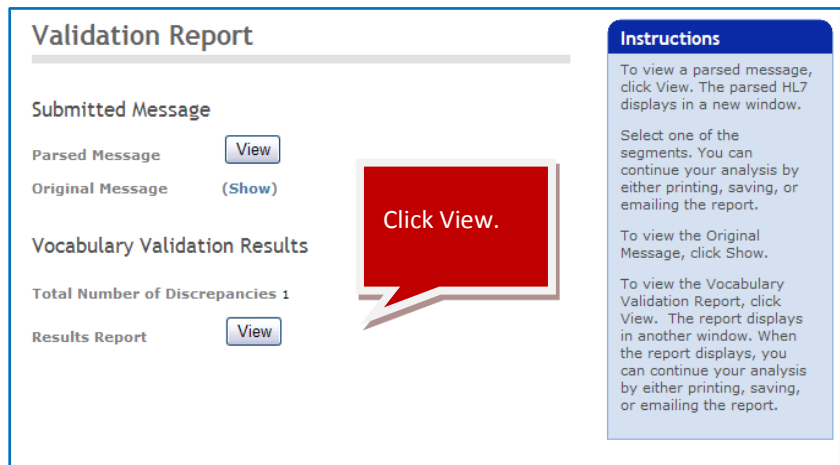
    Note: "Perform Vocabulary Validation" is disabled, if the structural validation contains any errors.

2. If there are, *no errors* indicated under Structural Validation Results, click "Yes" to perform Vocabulary Validation.

Result: The following window displays.

3. To view the Vocabulary Validation Results Report, click "View."

    Result: The report displays in a new window. When the report displays, you can continue your analysis by either printing, saving, or emailing the report.

The window below displays the Vocabulary Validation Report.